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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/744,929	01/31/2001	Hong-ki Choi	202021/180	6133

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Michael L Goldman
NIXON PEABODY LLP
Clinton square, P.O. BOX 31051
Rochester, NY 14603-1051

EXAMINER	
BROWN, JENNINE M	10

ART UNIT	PAPER NUMBER
1755	

DATE MAILED: 10/21/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/744,929	CHOI ET AL.	
	Examiner	Art Unit	
	Jennine M. Brown	1755	

-- The MAILING DATE of this communication appears on the cover sheet with th correspond nce address --

Period f r Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on 1/31/02.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) 1-25 is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) 1-25 is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

Abstract

Examiner has received the abstract (Exhibit A) and withdraws previous objection.

Claim Rejections - 35 USC § 112

Examiner has entered Applicants amendment, which obviates Examiners previous rejection, therefore the rejection has been withdrawn.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1-9, 12-25 are rejected under 35 U.S.C. 102(e) as being anticipated by Hosaka (US 6156690).

Hosaka teaches a process (col. 7, l. 41 – col. 8, l. 18; col. 9, l. 40-49; col. 10, l. 35-58) and a catalyst for polymerization of olefins whereby a magnesium compound is reacted with an alcohol, titanium compound, halogen, electron donor, aluminum compound and silicon compound (col. 2, l. 28-34, 38-41, 45-52, 56-62). Magnesium dihalides (col. 3, l. 4-21), alkyl magnesium dihalides, specifically magnesium chloride (col. 3, l. 22-30), dialkoxymagnesium or diarylmagnesium compounds (col. 3, l. 31-56)

are combined with titanium halide or alkoxytitanium halide compounds (col. 4, l. 36-55) and electron donor compounds which can be esters or carboxylic acids (col. 4, l. 56 – col. 5, l. 22, 51-56) which are also combined with organic silicon (col. 5, l. 23-50; col. 11, l. 39 – col. 12, l. 40) and/or aluminum compounds (col. 5, l. 60-65; col. 11, l. 25-38). Weight percents of each component are taught (col. 10, l. 21-28). Alcohols taught are 1 to 12 carbon atoms in length, particularly 2-ethylhexanol and n-heptanol, which fall within Applicants claimed range (col. 10, l. 59 – col. 11, l. 16). Contact temperatures taught fall between the range of –20 to 100 °C (col. 9, l. 62-67). Molar concentration of alcohol between 0.005 to 10 moles is taught (col. 11, l. 9-12).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claims 10-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hosaka (US 6156690) in view of Ro, et al. (US 5459116).

Hosaka, et al. teach a process and catalyst as described previously. Hosaka, et al. do not specifically teach the mole of alcohol to magnesium or the concentration of magnesium in solution in g/L. Ro, et al. teach a similar catalyst system using alcohol to solvate the magnesium compound whereby the amount of alcohol is on the order of 0.1 to 10 moles based on magnesium compound (col. 3, l. 19-30).

It would have been obvious to one of ordinary skill in the art to determine the molar amounts of alcohol and magnesium to determine the concentration of magnesium in the catalyst compound because the relative concentration of titanium can be calculated to figure out approximate activity of the catalyst complex.

Response to Arguments

Applicant's arguments filed on 07/31/2003 have been fully considered but they are not persuasive.

35 U.S.C. § 102(e)

Hosaka specifically teaches a method for producing a catalyst using "heat treatment with the solution of the forgoing magnesium compound dissolved in a alcohol or a titanium compound; and the method for obtaining a solid component by contacting and treating the suspension of a magnesium compound in a titanium compound or an inert hydrocarbon solvent with an electron donor compound or an electron donor compound and a titanium compound." (col. 6, l. 57-67). Regarding the argumentation

of alcohols having fewer than and more than 6 carbon atoms coming into contact with the magnesium compound, Applicants state in their argumentation, "because the short alkyl groups have greater coordination powers with magnesium compound ... the formed magnesium complex is more easily precipitated by the solubility difference between the long alkyl group compounds and the short alkyl group compounds" which Examiner interprets step a and b to be in conflict and essentially step b will be the controlling step in the reaction, therefore step a) is irrelevant. Secondly, the argumentation about the heated solution of magnesium compounds is taught specifically on page 6, starting at line 61, "heat treatment with the solution of the forgoing magnesium compound dissolved in a alcohol or a titanium compound". Lastly, with regard to the agitation of the solution, it is well known to stir a homogeneous and/or heterogeneous solution so that the materials are evenly mixed throughout to produce a uniform product. Example 1 in the Hosaka reference teaches the use of an agitator with the setup and stirring when the final ingredients were added (col. 13, l. 49 – col. 14, l. 3).

Examiner maintains the previous rejections.

35 U.S.C. § 103(a)

Hosaka teaches the process as described and argued previously and the Ho reference cures the deficiency of the molar ratios, which would be used for the alcohol to magnesium chloride. The method of Ro is merely being used to show that it is known in the art to add alcohols to magnesium chloride compounds for the resultant

Grignard reagent to be created and that the ratios of alcohol to magnesium compound would have been known at the time. Furthermore the argument that the magnesium has no reducing power because it has already been reduced by the alcohol is irrelevant.

Examiner maintains rejections.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL.** See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jennine M. Brown whose telephone number is (703) 305-0435. The examiner can normally be reached on M-F 8:00 AM - 6:00 PM; first Friday off.

After the move to the new USPTO Headquarters in Alexandria, VA, tentatively scheduled for the week of December 22, 2003, the examiner's new phone number will be (571) 272-1364 and Mr. Bell's new phone number will be (571) 272-1362.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mark Bell can be reached on (703) 308-3823. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.

jmb

Mark L. Bell
Supervisory Patent Examiner
Technology Center 1700